and the interest taken in its meetings. From its foundation up to the date referred to (fifty-four years) eighteen volumes of the *Transactions* in quarto had been published. During the succeeding fifty-four years about double that amount have been produced in the same form, besides fifty-eight volumes of the *Journal* in octavo, which latter was not commenced till 1857.

Then as regards attendance at the meetings during the first years of my fellowship, it was miserably small. If my memory does not deceive me, I recall a night in Soho Square when only five Fellows supported the President and Secretary. There was a dearth of papers too, and the discussion of such as were brought forward was discountenanced by the chair. All this is now happily a thing of the past, and I should not have alluded to those bad times had not the Society given proof of that inherent vitality which supported it under a temporary depression, and subsequently raised it to its present position.

It remains, sir, to thank you cordially for coupling my father's name with my own in this award, but for which, indeed, I could not have accepted it without a protest. I inherited from him my love of knowledge for its own sake, but this would have availed me little were it not for the guiding hand of one who had himself attained scientific eminence; who by example, precept and encouragement kept me to the paths which I should follow; launched me in the fields of exploration and research, liberally aided me during his lifetime, and paved for me the way to the position he so long held at Kew with so great credit to himself, and benefit especially to our Indian and Colonial possessions.

The gold medal of the Linnean Society was received on behalf of Surgeon-Major Wallich by his son, and, in presenting it, Dr. Günther spoke as follows:—

The gold medal of the Society is awarded this year to a zoologist, to Dr. George Charles Wallich. Although Dr. Wallich's scientific work commenced some years before, it was the year 1860 in which he entered upon the line of inquiry with which his name will be ever associated. On the recommendation of Sir Roderick Murchison and Prof. Huxley he was attached in that year as naturalist to H.M.S. *Bulldog*, on her voyage across the Atlantic to survey the sea bottom for the laying of the proposed Atlantic cable. The materials obtained by the sounding operations were slender; but in working them out, Dr. Wallich showed that he had already grasped all the principal problems of deep-sea research. To the solution of these problems he applied his wide range of knowledge, the soundness and power of his reasoning, his originality and independence of thought. His work, "The North Atlantic Sea-Bed," incomplete as it is, stands as a lasting record of the progress made by him in our knowledge of deep-sea life, and of the impetus which he gave to subsequent deep-sea exploration.

For more than twenty years he continued to work in the same line of inquiry, and in investigating collateral subjects, notably the life-history, structure and relationships of those unicellular organisms which play so important a part in pelagic and bathybial life, the lithological identity of the ancient chalk formation, and of the calcareous deposits in the oceans of the present time.

The remarkable results which he obtained in his investigations were due not only to his accuracy and keenness as an observer, but also to the ingenuity of the methods applied by him. Thus at a time when our modern micro-chemical methods were unknown, he employed the electric discharge as a means of differentiating the nucleus, and he determined the excretory function of the contractile vacuole.

Your Council were of opinion that work of such originality, advancing so many branches of biology, was peculiarly fit to be honoured by the award of the Linnean medal.

NOTES.

WE notice with deep regret the announcement that Lord Playfair died on Sunday. The funeral will take place on Saturday at St. Andrews, Fifeshire.

WE are requested to state that the Chemical Society's banquet to the past presidents on June 9, and also Dr. Mond's garden party on June 10, are postponed in consequence of the death of Lord Playfair, the senior past president and the last surviving founder of the Society.

THE Ladies Soirée of the Royal Society will take place next Wednesday, June 8.

SIR WILLIAM H. FLOWER, K.C.B., has received, from the German Emperor, the Royal Prussian order "Pour le Mérite" for Science and Art.

THE death is announced of Prof. F. Müller, distinguished for his works on ethnology and philology.

PROF. G. H. DARWIN, F.R.S., has been elected a foreign honorary member of the American Academy of Arts and Sciences, in succession to the late Prof. J. J. Sylvester.

AN exhibition of specimens of practical work of candidates at the technological examinations of the City and Guilds of London Institute will be opened at the Imperial Institute next Thursday, June 9, by the Right Hon. Lord Herschell.

THE Albert Medal of the Society of Arts for the present year has been awarded, with the approval of the Prince of Wales, the President of the Society, to Prof. Robert Wilhelm Bunsen, Foreign Member of the Royal Society, "in recognition of his numerous and most valuable applications of chemistry and physics to the arts and to manufactures."

INFORMATION of the death of Mr. W. M. Maskell, Registrar of the University of New Zealand, has been received by the *Entomologist's Monthly Magazine*. Mr. Maskell was well known for his researches in *Coccidæ*; he also published papers on *Aleurodidæ* and *Psyllidæ* amongst insects, and on Desmids in microscopic botany. The majority of his papers have appeared in the *Transactions* of the New Zealand Institute, the first having been published in 1879. At first he restricted himself to the species found in New Zealand, but later on those of Australia (especially the curious gall-making *Brachyscelidæ*), Asia, &c., came under his notice, he having become a recognised authority on the subject of *Coccidæ*. He usually published at least one paper a year in New Zealand, the later ones being lengthy, and all copiously illustrated by his own drawings.

THE Berlin correspondent of the *Times* announces that the German steamship *Helgoland* has just started on an expedition to the North Pole. The ship is built entirely of steel. She carries on board provisions for thirteen months and four boats, two of which she picks up at Tromsö. Special care has been taken in the selection of her crew, some eleven in all. The leader of the expedition, Herr Theodor Lerner, is accompanied by Dr. Brühl, Dr. Römer, and Dr. Schaudien, who are all experienced travellers and men of science. Two other expeditions—both of American origin—are about to set out with the object of reaching the North Pole. Lieut. Peary will attempt the Pole from North Greenland, while Mr. Walter Wellman will make the effort from Franz Josef Land. Mr. Wellman is now in London, and will leave in a few days for Tromsö, Norway, where his ice steamer, the *Frithyof*, is ready for him, and whence she will sail in about three weeks for the Far North. In his party are Prof. James H. Gore, of Columbia University, who will make gravity determinations in Franz Josef Land; Lieut. Evelyn B. Baldwin, of the United States Weather Bureau, who was on the Greenland ice cap with Lieut. Peary, and who is an accomplished meteorologist and geologist; Dr. Edward Hofma, of the University of Michigan, naturalist and medical officer; and Mr. Quirof Harlan, physicist from the United States Coast and Geodetic Survey, a Norwegian experienced in Arctic work.

THE Home Secretary has appointed Dr. Oliver, of Newcastle-upon-Tyne, and Dr. T. E. Thorpe, F.R.S., Government Analyst, as experts to proceed to the Potteries for the purpose of inquiring into the various kinds of glazes in use there, and as to whether any substitutes can be found for those containing lead. Not only will the work undertaken by these gentlemen have a humane bearing and be of a scientific nature; it will be helpful also to the manufacturers. This is the first instance (says the *British Medical Journal*) in which the British Government has called to its aid expert help, not only to assist it in framing regulations for the health of the workers, but also of helping on industries. As the manufacturers are sure to co-operate heartily with those to whom has been entrusted this important special inquiry, it is to be hoped that results will be arrived at which will remove from one of our prosperous and oldest industries the stain that has so long lain upon it.

DR. AGAMENNONE, who has paid considerable attention to the velocity of earthquake-waves, has recently published a valuable paper on the mean surface-velocity of the pulsations from the great Calcutta earthquake of last June 12 (*Rend. della R. Accad. dei Lincei*, vol. viii., 1898, pp. 265 271). Relying on accounts which have already appeared in NATURE, he assumes the centre of disturbance to be in 25° N. lat. and 91° E. long. At Calcutta, which is 400 km. from this point, the time of occurrence was 11h. 4·6m. a.m. (Greenwich mean time) according to Mr. La Touche; and 11h. 7m. according to Mr. Oldham. The earthquake was registered by seismographs and magnetographs at nineteen observatories in Europe, the most distant being Edinburgh, 7970 km. from the epicentre. Excluding the record on the Parc St. Maur magnetograms, which differs considerably from the others, the mean surface-velocity of the earliest vibrations was either 9 or 11 km. per second, according to the time taken for Calcutta. These first rapid vibrations lasted for about 23 minutes, and were succeeded by large long-period oscillations, the mean surface-velocity of which was either 2·61 or 2·76 km. per second. At Rome, the period of these oscillations was about 10 seconds, and their maximum amplitude 12″. Thus, as it crossed Italy, the complete wave must have been 54 km. in length, and the height of its crest about half a metre.

SENOR ANTONIO BLAZQUEZ communicates to the *Boletino* of the Madrid Geographical Society a preliminary paper on a fresh investigation as to the precise length of the Roman mile. The question has been a constant source of difficulty in connection with the determination of the sites of ancient cities, and the tracing of former inhabitants of the peninsula, and a great deal of evidence is discussed which goes to show that the Roman and the Arab miles were of the same length: 1672 metres. The length formerly accepted was 1481 metres. The detailed investigation is promised in a future paper.

DR. C. DAMMANN adds another to the already numerous monographs on German rivers in a paper on the Wupper, published in the *Verhandlungen des naturhistorischen Vereins der preussischen Rheinlande*. A careful study is made of the geology and geomorphology of the river and its basin, and of the rainfall and drainage. The fact that the basin of the Wupper consists almost entirely of impermeable rocks, gives the sudden variations in the volume of the stream some special features, especially with regard to floods. Some idea of the rapidity of these changes is given by the record of the rate of discharge on three successive days: 52·7, 182·3, and 51·7 cubic metres per second.

IN Darwin's geological observations on the volcanic islands visited during the voyage of H.M.S. *Beagle*, reference is made to a "volcanic bomb" found in the interior of Australia. The specimen was composed of green obsidian, and was found on a great sandy plain between the rivers Darling and Murray, at a distance of several hundred miles from any known volcanic region. Many similar specimens of obsidian "buttons" have since been found in Australia, and the *Proceedings* of the Royal Society of Tasmania (1897) contains two short descriptive papers on their occurrence in Tasmania. How these singular objects found their way to some of the localities in Tasmania, where their occurrence in undisturbed quartz drift far away from any known volcanic source has been reported, is unexplained. That they are volcanic products is unquestionable; and their spheroidal or discoid form points to rotation while in a fluid state. It has been suggested that the objects came from lunar volcanoes, but it is highly improbable (even if they were ejected from the moon) that they would reach our globe, and if they did they could not penetrate the atmosphere. Mr. T. Stephens, the author of one of the papers referred to, thinks the aborigines of Australia are probably largely responsible for the distribution of the obsidian buttons over the mud-plains of Victoria and Riverina, but no such explanation can be given in reference to most of the places where they have been found in Tasmania. In a paper by Messrs. W. H. Twelvetrees and W. F. Petterd in the *Proceedings* mentioned above, the suggestion is made that the objects are products of terrestrial volcanoes of an acid or subacid type, formerly in eruption in the southern hemisphere. The nearest known source of tertiary obsidian is New Zealand, but whether the objects have been transported through the air from that island, or from the Antarctic continent or elsewhere, it is impossible at present to decide.

WE learn from the *Meteorologische Zeitschrift* for April that Signor Boffito, librarian of the Moncalieri Observatory, near Turin, intends to publish a repertorium of Italian meteorology, which, like the valuable repertorium of German meteorology published by Dr. Hellmann in 1883, will contain a practically complete bibliography of meteorological works written in the Italian language. As the meteorological literature of Italy was especially rich in the fifteenth and sixteenth centuries, the publication of the proposed work will be very welcome. Signor Boffito will be glad to receive notice of any works published in the Italian language in other countries.

IN the U.S. *Monthly Weather Review* for February an interesting account is given of the value of a searchlight for making weather signals known in large cities or seaports at an hour of the evening when it is too late to give warning by the usual method. In the month of February 1895, the searchlight for the unfortunate battleship *Maine*, then nearing completion, was lent for temporary use at the Chicago office of the Weather Bureau, and the experiments were conducted by the present chief of the latter institution. From observers and other persons it was ascertained that the signals were clearly seen at a distance of twenty miles. At present the great cost of maintaining the apparatus in operation would preclude its adoption, but in the event of the expense being eventually reduced, the author thinks it might be used by the Weather Bureau for the purpose of immediately disseminating forecasts made from the evening observations.

THE relative merits of the weather predictions issued daily by the U.S. Weather Bureau for one or two days in advance, and those published by "farmer's almanacs" a year or more in advance, were lately made the subject of newspaper paragraphs in America, and are commented upon by Prof. Cleveland Abbe in the *Monthly Weather Review*. Of course, no true comparison can be made between the results; for while the predictions made by the Weather Bureau are based upon actual observations of atmospheric conditions, the popular weather prophets depend chiefly upon inspiration and astrological combinations, though some do go so far as compile from the records of past years a table showing what sort of weather has prevailed most frequently on the respective days of the year, and use this table for predicting the weather of future years. The art of almanac preparation, however, is in the free use of a system of general terms which will apply just as well to a thunderstorm, a hurricane, or an earthquake. The warning "look out for something very unusual about this time," is a meteorological prediction of this character.

FOR the benefit of those who make a comparison between the prophesies of the almanac-maker and the forecasts of the U.S. Weather Bureau, Prof. Abbe delivers the following homily:— In connection with meteorology in general, and especially weather predictions, there is a popular tendency to make a mistaken use of the word "science." Knowledge is science as distinguished from the world of imagination, which is fiction. Whatever is logical and true may be called scientific, but whatever is illogical or untrue is certainly not scientific. A map or a survey that gives us an exact picture of the true location of every spot on the earth's surface responds to scientific geography. A catalogue of all the plants and animals on the earth or of the stars in the sky constitutes a biological or an astronomical survey, and is truly scientific. A series of maps of the weather at 8 a.m. daily is a scientific meteorological work, and any predictions of the weather that can be logically deduced from these maps is a scientific prediction. But a lot of predictions that are said to be deduced in defiance of sound logic and with a very imperfect knowledge of the laws of nature are fanciful fictions and not scientific, because they are contrary to all sound knowledge.

IT is well known that the Kea or Mountain Parrot of New Zealand has acquired the habit of attacking sheep, and making holes by means of its sharp and powerful beak in the backs of these animals for the purpose of abstracting the kidney fat, which appears to be esteemed as a luxurious diet. It is supposed that this peculiar habit or instinct was developed by the bird getting the fat from the skins of sheep that had been slaughtered; but this solution is not very satisfactory, as there appears nothing to connect the fat on the skins of sheep with the live animals. In a note published in the *Zoologist* (May 16), Mr. F. R. Godfrey, writing from Melbourne, offers the following solution of the mystery, which seems to him to be simple and satisfactory, and more rational than the sheep-skin theory. In the hilly districts of the Middle Island of New Zealand there is a great abundance of a white moss or lichen, which exactly resembles a lump of white wool, at the roots of which are found small white fatty substances, supposed by some to be the seeds of the plant, and by others to be a grub or maggot which infest it, which is the favourite food of the Kea. Probably the bird, misled by this resemblance, commenced an exploration in sheep, and this proving satisfactory, originated the new habit. In a note to this suggestion, the editor points out that Mr. Godfrey is in agreement with Mr. F. R. Chapman (New Zealand *Journal of Science*, 1891), who, describing a valley of the Upper Waimakariri, Canterbury, says: "A very interesting *Raoulia*, or vegetable sheep, was very plentiful on steep, rocky places; but I believe a finer species is found on Mount Torlesse. . . . It is said that the Keas tear them up with their powerful beaks, and that these birds learnt to eat mutton through mistaking dead sheep for masses of *Raoulia*."

AS the British Patent Law at present stands, foreign inventors can obtain patents in this country without "working" their invention, and they take the fullest advantage of this state of affairs. To give an instance: in the five years from 1891 to 1895 no less than six hundred patents were granted to foreigners for coal-tar products, not a single one of which is being worked in this country. The object of Section 22 of the Patents, Designs, and Trade Marks Act (1883) was to ensure the working in the British Isles of inventions for which the privilege of British registration has been granted, either by the patentee or by others. In order to secure this object, the Section confers upon the Board of Trade authority to order the granting of licenses on equitable terms. Unfortunately, although the Act has been in force for fifteen years, this authority has never been used, because the prosecution of a petition for the exercise of such authority involves what is practically a very costly legal contest at the expense of the petitioner. Upon the invitation of the Board of Trade, a petition has at last been carried through with the approval of the Manchester Chamber of Commerce. The facts and issue of the prosecution of it are set forth in a pamphlet prepared by the Chamber, and they need only be read to understand that British trade and industry is seriously prejudiced by the present unsatisfactory state of the Patent Law. In France, if a patent is not worked within two years (and the patentee has to prove that it *is* worked), the patent is revoked, and is declared void. In Germany the law is similar, with this exception—that the patentee, instead of two, has three years' time within which to work his invention. What is wanted is a short amending Act which will bring our Patent Law in conformity with those of Germany and France; and it is with the object of calling attention to the need of such a provision that the Manchester Chamber of Commerce has placed the whole facts before the public.

A NUMBER of examples of *Abraxas grossulariata*, in which the markings of the fore-wings, which are usually of a bright yellow, were of a deep dull ochreous colour, were exhibited at a meeting of the South London Entomological and Natural History Society at the end of last year (*Proceedings* for 1897). The specimens were sent by the Rev. J. Greene, of Clifton, Bristol, who reared them from larvæ found on the shrubs of Euonymus, which appears to be their favourite food. During the past six years Mr. Greene has bred a large number of these insects under precisely the same conditions as regards food, temperature, light and darkness. The insects were kept indoors both as larvæ and pupæ, so wet and dry weather could apparently have no effect upon them; and they were all collected within a two-mile radius, where there was no difference of soil. And yet, under these uniform conditions, Mr. Greene produced at least two hundred and fifty varieties. A remarkable variation was noticed in the "contour" of the specimens—that is, in the length, breadth, and curvature of the upper wings; but it is difficult to determine the causes which can produce such a change in the form and shape of the wings. In Mr. Greene's opinion there is one, and one only method by which entomologists may reasonably hope to obtain varieties, namely, by "crossing" the imagines, dark with light, &c. He considers this to be the true cause of the varieties of *grossulariata* obtained by him.

THE drinking habits of some butterflies and moths are briefly described by Mr. J. W. Tutt in a paper published in the *Proceedings* of the South London Entomological and Natural History Society, 1897. A number of observations are cited showing that the drinking of large quantities of water by certain species is beyond question. Mr. Tutt concludes as follows:— "That they drink infinitely more than is required by their tissues under any possible conditions appears certain. Baron's note (NATURE, vol. xxviii. page 55, May 17, 1883) is sufficient proof of this: whilst we have known *Polyommatus damon* to sit for more than an hour motionless, except for the slight movements of sucking up and discharging the moisture almost continuously. What this internal bath may really mean we cannot even surmise. Another important factor as to this drinking habit is a strange one; the 'thirsty souls' are, so far as my own observation goes, and so far as De Nicéville's and Bates' remarks show, almost entirely males. Why is this drinking habit confined to one sex, and why is it indulged in whilst the females are away egg-laying, or presenting the strange phenomenon of a perfectly different habit from that indulged in by their lords and masters? It is of course quite reasonable to suppose that, if a number of exact observations be made, females in small numbers do visit puddles, and pools, and streams for drinking purposes. Certain it is that females come to sugar equally with males, but this we may take it is for food, and not for drink, and it is just in this that our difficulty lies. We know that moths and butterflies that visit sugar, over-ripe fruit, and similar dainties are of both sexes. They come, it seems, for food; but males alone seem to be attracted by pure water. Does their extra activity give them a greater need in this direction? and has a habit which was at first (and still is in a measure) a necessity become so pleasurable that excessive drinking has literally become a vice?"

MESSRS. SEELEY AND CO. will shortly publish a concise popular account of wireless telegraphy, by Mr. Richard Kerr, being the substance of lectures delivered by him in the principal cities of England, Scotland, and Holland. Mr. Preece will contribute a preface to the volume.

HERREN FEIEDLÄNDER, of Berlin, have just issued their Book-Catalogue No. 430, consisting of 103 pages, entirely devoted to the anatomy, physiology, and embryology of plants.

AN earnest appeal is made by the Rev. W. Porter, "Vonmueller," Arnold Street, South Yarra, Victoria, one of the trustees, for further contributions for the erection of a granite monument over the grave of the late Baron Ferdinand von Mueller, in the cemetery of St. Kilda.

DR. ERWIN F. SMITH reprints a lecture delivered before the Massachusetts Horticultural Society on the spread of plant diseases, in which he discusses the parts played respectively by insects and by the wind in the propagation of the diseases of plants.

THE May number of the *National Geographic Magazine* is devoted to an account of the geography, resources, and political conditions of Cuba, and contains as a frontispiece the portrait of Captain Charles D. Sigsbee, the commander of the ill-fated battleship *Maine*. For several years, prior to taking command of the *Maine*, Captain Sigsbee was Hydrographer of the Navy Department, and his contributions to our knowledge of the sea bottom, and its topography, place him in the front rank of scientific hydrographers.

MESSRS. TAYLOR, TAYLOR, AND HOBSON have issued a booklet of twenty-three pages setting forth the merits of their Cooke lens. Every photographer knows how difficult it is to obtain a lens which gives a sharply-defined image all over the field of view. By increasing the number of lenses, it is possible to overcome this difficulty and secure sharp definition even at the margins of a picture. The Cooke combination satisfies this photographic desideratum by the simplest means, only three lenses being used in its construction. The superiority of the lens over the symmetrical and other old types is strikingly shown in the book by a series of reproductions from the margins of plates.

THE eleventh part of Mr. Oswin A. J. Lee's illustrated work "Among British Birds in their Nesting Haunts" has been published by Mr. David Douglas, Edinburgh. Ten plates are included in this new part, representing nests of the robin, wren, rook, marsh tit, golden eagle, spotted flycatcher, teal, and pheasant. An insertion announces that the author is desirous of taking photographs of the nests of the following birds: kite, Montagu's harrier, honey buzzard, hobby, garganey, and ruff. If any reader is able to help Mr. Lee to procure these, intimation should be sent to him at 58 Manor Place, Edinburgh.

"WE have the satisfaction of being able again to look back upon a year of general activity and extended progress, which will bear comparison with any of its predecessors." The Report of the Marlborough College Natural History Society, from which these words have been taken, show that interest in scientific subjects is well fostered by the Society. The members are encouraged to observe and to contribute papers recording the results of their observation and reading, so that the Society, like other similar societies in our public schools, is of great assistance in developing very useful faculties. For instance, the following observation, by "E. A. M.," of climbing habit in frogs is interesting:—"Some frogs have taken up their abode for the last month in two deserted blackbirds' nests, built in round thick box bushes, about two feet from the ground. One frog is generally to be seen alone sometimes on or near the edge of the nest, sometimes comfortably ensconced in the middle, only his head peeping out. In the other nest there are now always two frogs." Mr. E. Meyrick describes and figures some cinerary urns discovered during excavations in the College grounds.

THE additions to the Zoological Society's Gardens during the past week include a Collared Peccary (*Dicotyles tajacu*) from South America, presented by Mr. Eustace Grey; a Gazelle (*Gazella dorcas*, ♂) from North Africa, presented by Mr. J. D. Lambert; a Short-headed Phalanger (*Petaurus breviceps*) from Australia, presented by Mr. Julian T. Pym; a Small Hill Mynah (*Gracula religiosa*) from India, presented by Mrs. Strather; a —— Squirrel (*Sciurus*, sp. inc.), three Schlegel's Doves (*Calopelia puella*) from West Africa, presented by Mr. W. H. Boyle; two Malabar Squirrels (*Sciurus maximus*, var. *dealbatus*) from India, presented by Mr. R. C. Wroughton; an Algerian Tortoise (*Testudo ibera*) from North Africa, presented by Mr. Albert West; a Smooth Snake (*Coronella austriaca*), British, presented by Mr. Bryan Hook; a Black-shouldered Kite (*Elanus cœruleus*), a Tachiro Goshawk (*Astur tachiro*), a Spotted Eagle Owl (*Bubo maculosus*), two Infernal Snakes (*Boodon infernalis*), two Lineated Snakes (*Boodon lineatus*), a Smooth-bellied Snake (*Homalosoma lutrix*), four Rough-keeled Snakes (*Dasypeltis scabra*), eleven Rufescent Snakes (*Leptodira hotambœia*), four Rhomb-marked Snakes (*Trimerorhinus rhombeatus*), fifteen Crossed Snakes (*Psammophis crucifer*), a Cape Adder (*Bitis atropos*), three Puff Adders (*Bitis arietans*) from South Africa, presented by Mr. J. E. Matcham; a Gazelle (*Gazella*, sp. inc., ♂) from Senegal, two Black-striped Wallabies (*Macropus dorsalis*, ♂ ♀) from New South Wales, a Canadian Skunk (*Mephitis mephitica*), a Florida Tortoise (*Testudo polyphemus*) from North America, a Beccari's Cassowary (*Casuarius beccarii*) from New Guinea, a Sharp-nosed Crocodile (*Crocodilus acutus*) from Jamaica, deposited; two Mantchurian Cranes (*Grus japonensis*) from North China, purchased; an African Wild Ass (*Equus tæniopus*, ♂), two Barbary Wild Sheep (*Ovis tragelaphus*), two Black-necked Swans (*Cygnus nigricollis*), bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

SUN WORSHIP BY TUSAYAN INDIANS.—In the fifteenth annual report of the U.S. Bureau of Ethnology, and in recent numbers of the *American Anthropologist*, Dr. J. Walter Fewkes gives a detailed account of a group of the ceremonials which form the ritual practised by the Tusayan Indians. It has been known for some years that the aborigines of the semi-deserts in the south-western portion of the United States possess a remarkably elaborate system of belief and ceremonial, and Dr. Fewkes has devoted a considerable amount of attention to them in order to determine the significance of the various parts of the ritual followed. In the course of his investigations he has made a number of interesting observations on the astronomical means used for determining the time for ceremonials. He has found